

DODECATHEON FRENCHII (VASEY) RYDB.
(PRIMULACEAE) IN ALABAMA

STEPHEN L. TIMME AND JIM LACEFIELD

ABSTRACT

Dodecatheon frenchii is reported for Alabama. Its location in the northwest portion of the state represents the most southerly distribution for the species.

Key Words: *Dodecatheon frenchii*, Hartselle sandstone, Alabama

While the senior author was conducting bryological field studies in northwest Alabama, several populations of *Dodecatheon* (Primulaceae) occurring under sandstone ledges were observed to appear somewhat different from the typical *Dodecatheon meadia* L. of limestone glades and outcrops in the area. Subsequent collections resulted in the identification of the specimens as *Dodecatheon frenchii* (Vasey) Rydb. (French's Shooting Star). As far as is known, these specimens represent first collections for Alabama.

Dodecatheon frenchii can be separated from *D. meadia* in the field by the presence of ovate leaves with blades that are abruptly narrowed to the petiole, while *D. meadia* has oblanceolate to nearly spatulate leaves with attenuate bases (Rydberg, 1932; Fassett, 1944). In addition, the filaments of *D. frenchii* are free to nearly half their length and the base of each anther is auricled. In *D. meadia*, the filaments are united nearly to the apex, and the bases of the anthers lack auricles or are only slightly auricled (Rydberg, 1932).

Dodecatheon frenchii in northwest Alabama is associated with overhangs of Hartselle sandstone, a Mississippian-aged, medium- to coarse-grained rock which forms much of the escarpment in the uplands south of the Tennessee River in Colbert County. This area is part of the physiographic province known as the "Little Mountains" section of the interior Cumberland Plateau and is highly dissected with deeply-cut ravines. The bluff tops are vegetatively characterized by *Quercus stellata* Wang. (post oak), *Q. alba* L. (white oak), *Q. falcata* Michx. (southern red oak), *Q. velutina* Lam. (black oak), *Q. prinus* L. (chestnut oak), *Carya tomentosa* (Poiret) Nutt. (mockernut hickory), *C. glabra* (Miller) Sweet (pignut hickory), and *Pinus virginiana* Miller (scrub pine). At the base of the ravines *Tsuga canadensis* (L.) Carr. (eastern

hemlock), *Fagus grandiflora* Ehrhart. (beech), *Magnolia macrophylla* Michx. (umbrella tree), *Liriodendron tulipifera* L. (tulip tree), *Ilex opaca* Ait. (holly), and *Ostrya virginiana* (Miller) K. Koch. (hop hornbeam) represent the common characteristic woody plants.

Populations of *Dodecatheon frenchii* were found growing under moist, dripping sandstone overhangs. The plants were never found growing more than a few centimeters past the drip line, in regolith weathered from the overhanging rock. While some seepage of water was noted in a few places, below the overhang the soil environment is for the most part not visibly wet. The plants were not found in places where leaf litter mulched the soil extensively, but are widespread where the floor beneath the overhang was deep in the organic-poor sandy regolith. Populations were located on southern as well as northern exposures. The plants grow in homogeneous clusters, some as large as fifty square meters. Associated plants during the flowering period include *Thalictrum thalictroides* (L.) Boivin, *Plantago* sp., and *Tiarella cordifolia* L. The flowering period for *D. frenchii* in northwest Alabama is from mid-April to mid-May, with fruit maturing in June. Following seed formation, the plant dies back and becomes inconspicuous by late summer.

These northwest Alabama collections represent the most southerly distribution reported for *Dodecatheon frenchii*. Its nearest, most southern-distributed counterpart is a population located in Newton County, Arkansas. It also occurs in southern Illinois, where it was first collected, and has been reported from Pennsylvania, Minnesota, and Wisconsin (Voigt and Swayne, 1955).

Reports of *Dodecatheon frenchii* occurring under limestone overhangs north of the Tennessee River were investigated, and resulted in no populations being located. As far as is known, no populations occur outside the "Little Mountains" area of the state. The habitats of the species in this area fit well with those of collections in other states. A search for *D. frenchii* in sandstone ravines characteristic of other areas in northern Alabama may result in locating a population. These areas (Little River Canyon and Warrior River Basin), however, have been extensively studied.

Alabama: Colbert Co.: Under dripping sandstone overhangs ca. 9.6 km south of U.S. Hwy. 72 and 1.2 km north of County

Rd. #41. Cane Creek Drainage. James Lacefield Farm. Sec. 15 & 16, R12W, T5S; *Timme 9431*, with Jim Lacefield and Frank Bowers. *Timme 9734*, with Jim Lacefield.

Specimens are deposited in KSP; duplicates are available.

ACKNOWLEDGMENTS

Funding for this study was provided in part by a faculty grant from the University of North Alabama, Florence, to the first author. The first author thanks the Department of Biology, Pittsburg State University for providing funds for collecting additional specimens. Thanks are also due to Dr. Samuel B. Jones of GA, Hermann Nonnenmacher of KSP, and an anonymous reviewer for comments on the manuscript.

LITERATURE CITED

- FASSETT, N. C. 1944. *Dodecatheon* in eastern North America. Amer. Midl. Naturalist 31: 355–486.
- RYDBERG, P. A. 1932. Flora of the Prairies and Plains of North America. New York Botanical Garden, NY.
- VOIGT, J. W. AND J. R. SWAYNE. 1955. French's Shooting Star in southern Illinois. Rhodora 57: 325–332.

S. L. T.

THEODORE M. SPERRY HERBARIUM
DEPARTMENT OF BIOLOGY
PITTSBURG STATE UNIVERSITY
PITTSBURG, KS 66762

J. L.

RT. #1, BOX 282
TUSCUMBIA, AL 35674